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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
REDDY, KARUNA P	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/579,096
Filing Date: May 12, 2006
Appellant(s): KIRSCH ET AL.

Harris A. Pitlick
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/22/2008 appealing from the Office action mailed 7/30/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,286,843	Wood et al	2-1994
4, 940, 732	Pastorino et al	7-1990
Technical Data (Acronal A220)	BASF	1-2001
2002/0052433	Auchter et al	5-2002
3, 964, 955	Nakabayashi et al	3-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-13, 15-18, 20-21, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al (US 5, 286, 843) as evidenced by Pastorino et al (US 4,940,732), in view of technical data for Acronal® A 220 (BASF).

Wood et al discloses a process for improving water whitening resistance of a pressure sensitive adhesive containing an aqueous latex emulsion and water soluble ions by removing the water soluble ions. The preferred method of removing the water soluble ions is to contact either the aqueous latex emulsion, the formulated PSA containing the aqueous latex emulsion or both with ion exchange resin (abstract). The removal of water soluble ionic compounds in the dispersion can be accomplished by dialysis, deionization with ion exchange resin to increase the water resistance (column 1, lines 66-68, column 2, line 1).

The aqueous latex polymer may be formed from any monomer or mixture of monomers which yield a water soluble latex, film forming polymer. See example 1 for the weight percentages of alkyl acrylates in claim 3; 0.3 g Emcol® 4500 surfactant; and Drew® T-4201 defoamer which reads on the at least one additive of claim 11. Emcol® 4500 is “sodium dioctyl sufosuccinate” as evidenced by Pastorino et al at column 4, lines

5-6 and reads on ionic emulsifier and water-soluble ionic compound of present claims. The term “latex” refers to a water soluble polymer which may be prepared by conventional polymer techniques such as emulsion polymerization (column 3, lines 18-21). The removal of water-soluble ions from the aqueous latex polymer emulsion or PSA is critical to the operation (column 3, lines 61-63) is interpreted as 100% removal and reads on the at least 50% of claim 1 and at least 90% of claim 5. The PSA is used to adhere clear labels and decals to surfaces (column 3, lines 1-2). See example 4 wherein the PSA formulation is direct coated onto Mylar® film.

Wood et al is silent with respect to adding at least one salt of a monoalkyl or dialkyl ester of a sulfonated dicarboxylic acid after the removal of water-soluble ionic compound.

However, it is apparent, from technical data for Acronal® A 200, that wetting process on various substrates, with acrylic copolymer emulsions used in the manufacture of pressure sensitive adhesives, can be facilitated by the addition of 0.5 to 1.5% of a standard anionic surfactant such as sodium salt of dioctyl sulfosuccinate. Therefore, it would have been obvious to one skilled in the art at the time invention of invention to add sodium salt of dioctyl sulfosuccinate, in an amount of from 0.5 to 1.5% to the pressure sensitive adhesive, containing a latex aqueous emulsion, of Wood et al as evidenced by Pastorino et al, for improving wettability of the pressure sensitive adhesive on various substrates, if one skilled in the art can tolerate a small decrease in the improvement of water whitening resistance with a concurrent improvement in wettability property. Court held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945) and

that it is "Obvious to try" - choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success in KSR, 550 U.S. at ___, 82 USPQ2d at 1396.

Claims 1-13, 15-18, 20-21, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al (US 5, 286, 843) as evidenced by Pastorino et al (US 4,940,732), in view of Auchter et al (US 2002/0052433 A1).

Wood et al discloses a process for improving water whitening resistance of a pressure sensitive adhesive containing an aqueous latex emulsion and water soluble ions by removing the water soluble ions. The preferred method of removing the water soluble ions is to contact either the aqueous latex emulsion, the formulated PSA containing the aqueous latex emulsion or both with ion exchange resin (abstract). The removal of water soluble ionic compounds in the dispersion can be accomplished by dialysis, deionization with ion exchange resin to increase the water resistance (column 1, lines 66-68, column 2, line 1).

The aqueous latex polymer may be formed from any monomer or mixture of monomers which yield a water soluble latex, film forming polymer. See example 1 for the weight percentages of alkyl acrylates in claim 3; 0.3 g Emcol® 4500 surfactant; and Drew® T-4201 defoamer which reads on the at least one additive of claim 11. Emcol® 4500 is "sodium dioctyl sufosuccinate" as evidenced by Pastorino et al at column 4, lines 5-6 and reads on ionic emulsifier and water-soluble ionic compound of present claims. The term "latex" refers to a water soluble polymer which may be prepared by conventional polymer techniques such as emulsion polymerization (column 3, lines 18-21). The removal of water-soluble ions from the aqueous latex polymer emulsion or

PSA is critical to the operation (column 3, lines 61-63) is interpreted as 100% removal and reads on the at least 50% of claim 1 and at least 90% of claim 5. The PSA is used to adhere clear labels and decals to surfaces (column 3, lines 1-2). See example 4 wherein the PSA formulation is direct coated onto Mylar® film.

Wood et al as evidenced by Pastorino et al, is silent with respect to adding at least one salt of a monoalkyl or dialkyl ester of a sulfonated dicarboxylic acid after the removal of water-soluble ionic compound.

However, Auchter et al teach that aqueous polymer dispersions generally comprise wetting agents, to achieve good substrate wetting and a largely smooth and flawless surface (paragraph 0003). A disadvantage when using wetting agents is the severe foaming which reaches a critical extent especially in the high-speed coating units which are customary nowadays, and prevents the development of flawless surfaces (paragraph 0005). The object of Auchter et al's invention is to provide wetting agents having an extremely low foaming tendency (paragraph 0006) which is achieved by the use of solution of a salt of a monoalkyl or dialkyl ester of a sulfonated dicarboxylic acid as wetting agent (paragraph 0007-0008). The solution is used as a wetting agent in amounts from 0.1 to 10 parts by weight per 100 parts by weight of polymer (paragraph 0027). Therefore, it would have been obvious to one skilled in the art at the time of invention to add a solution comprising salt of a monoalkyl or dialkyl ester of a sulfonated dicarboxylic acid as wetting agent, in amounts from 0.1 to 10 parts by weight per 100 parts by weight of polymer, to the pressure sensitive adhesive, containing a latex aqueous emulsion, of Wood et al as evidenced by Pastorino et al, for improving wettability of the pressure sensitive adhesive on various substrates and a reduction in foam formation during high speed coating to yield a smooth and flawless polymer

surface, if one skilled in the art can tolerate a small decrease in the improvement of water whitening resistance with a concurrent improvement in wettability property, reduced foam formation during high speed coatings and thus yield smooth and flawless polymer surface. Court held that it is "Obvious to try" - choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success in KSR, 550 U.S. at ___, 82 USPQ2d at 1396.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood (US 5, 286, 843) as evidenced by Pastorino et al (US 4,940,732), in view of technical data for Acronal® A220 (BASF) as applied to claim 6 above, and further in view of Nakabayashi et al (US 3, 964, 955).

The discussion with respect to Wood as evidenced by Pastorino et al, in view of technical data for Acronal® A220 (BASF) above, is incorporated here by reference.

Wood as evidenced by Pastorino et al, in view of technical data for Acronal® A220 (BASF), is silent with respect to removal of at least one ionic compound by diafiltration.

However, Nakabayashi et al teach a method of removing metal ions from the dispersing medium of an emulsion by diafiltration or dialysis method (column 10, lines 41-43). Therefore, it would have been obvious to one skilled in the art at the time invention was made to use the diafiltration method to remove ionic compounds from the emulsion polymer dispersion of Wood as evidenced by Pastorino et al, in view of technical data for Acronal® A220 from BASF, because Nakabayashi et al has proven successfully the removal of ionic components such as metal ions by diafiltration or dialysis method and one of ordinary skill in the art would expect the diafiltration method

to work for the removal of water soluble ionic components in emulsion polymer dispersion of Wood as evidenced by Pastorino et al, in view of technical data for Acronal® A220 from BASF, motivated by expectation of success.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al (US 5, 286, 843) as evidenced by Pastorino et al (US 4,940,732) in view of Auchter et al (US 2002/0052433 A1) as applied to claim 6 above, and further in view of Nakabayashi et al (US 3, 964, 955).

The discussion with respect to Wood as evidenced by Pastorino et al, in view of Auchter et al above, is incorporated herein by reference.

Wood as evidenced by Pastorino et al, in view of Auchter et al is silent with respect to removal of at least one ionic compound by diafiltration.

However, Nakabayashi et al teach a method of removing metal ions from the dispersing medium of an emulsion by diafiltration or dialysis method (column 10, lines 41-43). Therefore, it would have been obvious to one skilled in the art at the time invention was made to use the diafiltration method to remove ionic compounds from the emulsion polymer dispersion of Wood as evidenced by Pastorino et al, in view of Auchter et al because Nakabayashi et al has proven successfully the removal of ionic components such as metal ions by diafiltration or dialysis method and one of ordinary skill in the art would expect the diafiltration method to work for the removal of water soluble ionic components in emulsion polymer dispersion of Wood as evidenced by Pastorino et al in view of Auchter et al, motivated by expectation of success.

(10) Response to Argument

It is noted at the outset that present claims are directed to enhancing at least one performance property by removing water-soluble ionic compound and then adding at least one salt of a monoalkyl or dialkyl ester of a sulfonated dicarboxylic acid (also a water-soluble ionic compound).

Examiner acknowledges that the grounds of rejection A through D, I and J are moot in view of the cancellation of claims 10-20, 24 and 25 in this amendment.

Appellants argue that (a) Wood discloses the necessity for removing ionic compounds from polymer dispersions. Why, absent the present disclosure as a guide, would one skilled in the art remove such ionic compounds and then add back an ionic compound with any expectation of success? (b) One reading BASF might expect better wetting action after adding the sodium salt of dioctyl sulfosuccinate to Acronal® A 200 but would expect water whitening behavior, in view of Wood's disclosure of the deleterious effects of ionic compounds.

In response, appellant's attention is drawn to paragraph 16 of office action mailed 7/30/2008, where it states that one skilled in the art would recognize that removal of water soluble ionic compounds, such as sodium dioctyl sulfosuccinate, while improving water-whitening resistance would lead to poor wettability property because they are known to function as wetting agents. It is also stated in paragraph 16 of office action mailed 7/30/2008 that post addition of some amount of the water-soluble ionic compounds such as sodium dioctyl sulfosuccinate is within the scope of a skilled artisan, if one skilled in art can tolerate some loss in water whitening resistance but obtain a PSA with concurrent improvement in wettability property based on the teachings of BASF.

Furthermore, given that present claims are directed to a method of improving at least one performance property, it is the examiner's position that Wood et al discloses improved water whitening resistance of pressure-sensitive adhesive with removal of water-soluble ionic compound, while BASF teaches another advantage of adding sodium salt of dioctyl sulfosuccinate (i.e. improved wetting behavior of pressure-sensitive adhesive). Thus, both Wood et al and BASF teach individually an improvement in at least one performance property and meets the claim limitation. In addition, it is noted that Wood et al (column 1, lines 8-15) and Acronal® A 220 of BASF (Table I) are related in that both are pressure sensitive adhesives comprising aqueous polymer dispersions and are used on substrates such as polyethylene.

Appellants argued earlier that samples subjected to diafilteration without Lumiten I-SC show poor wetting behavior, but following the addition of Lumiten I-SC, wetting of samples on the surface to be coated was good. Examiner responded, to these arguments, in paragraph 16 of office action mailed 7/30/2008, by finding that post addition of water-soluble ionic compound is within the scope of one of ordinary skill in the art, if one of ordinary skill in the art would tolerate a small decrease in the improvement of water whitening resistance with a concurrent improvement in wettability property. Thus, appellant concludes that examiner acknowledges some decrease in water whitening resistance. Appellants argue that data in Table 1 of present specification shows no tolerable decrease in water whitening resistance. For e.g.,

a) A film made from Acronal A220 is completely white after 40 min.

b) A film made from Acronal A220 after removal of ions is completely transparent.

c) A film made from Acronal A220 after ion removal and after re-addition of a substantial amount (1%) of a salt of a dialkyl ester of sulfonated succininc acid (i.e. Lumiten I-SC) would be expected to show some decrease in water whitening resistance after 40 min. but is unexpectedly completely transparent after 40 min.

Based on these results appellants conclude that unexpected results show the absence of expected decrease of water whitening resistance.

Appellant arguments with respect to unexpected results are unpersuasive for the following reasons: Firstly, with respect to (a) and (b) it is disclosed in Wood et al, that presence of water-soluble ionic compounds in PSA's comprising aqueous polymer dispersion causes clouding i.e. water-whitening, and removal of water soluble ionic compounds lead to improvement in water-whitening resistance i.e. no clouding or is transparent. Secondly with respect to (c), it is obvious that 1% of a salt of dialkyl ester of sulfonated succininc acid is added after removing water-soluble ionic compound from the polymer dispersion. Also, based on the broad disclosure in present application, water-soluble ionic compound can be present in amounts of up to 5 parts by weight per 100 parts by weight of the dispersed polymer prior to its removal in the first step. Absent evidence of how much water-soluble ionic compound was present initially and removed in first step in the example, it is not clear how the transparency of Acronal A220 (an aqueous polymer dispersion) processed according to present method, can be compared to the transparency or lack of transparency of Acronal A220 wherein the amount of water-soluble ionic compound is unknown. Thus, examiner disagrees with appellant's argument of a showing of unexpected results. In addition, the scope of present independent claim 1 is open to addition of any amount of a salt of monoalkyl or dialkyl ester of sulfonated succininc acid.

Appellants argue that examiner has found that Table 1 in the specification points to inferior resistance to water-whitening when Lumiten is added, relying on data at 60 minutes. Appellants maintain that while there is a somewhat difference in results between “0" and “0-1”, this difference is insignificant, especially when compared to the significant difference in wetting behavior.

While appellants argue that the difference is insignificant when compared to the significant difference in wetting behavior, it is the examiner’s position that aqueous dispersion prepared according to the presently claimed method steps, nevertheless showed some decrease in water-whitening resistance and is an expected result as stated earlier by the examiner. Furthermore, there is no data in present application to support the appellant’s argument that there was a significant difference in wetting behavior after 1% of a salt of dialkyl ester of sulfonated succininc acid.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Karuna P. Reddy/Karuna P. Reddy

Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796

Conferees:

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796

/Jennifer Michener/

QAS, TC1700